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Architecture and Sustainability: Utopia or a New Design Commitment?

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ARCHITECTURE AND SUSTAINABILITY: UTOPIA OR A NEW DESIGN COMMITMENT? *

If the history of the society and its culture was split in ten-year periods, and if we want to analyse our recent history, the most faithful would be to read the changes and transformations in the ideals, in projects, and utopias.

Reading the cultural transformations in its tangible signs would not lead to significant results for the large hysteresis of these events: it is true that metropolitan areas will catalyse all major economic, social, environmental challenges, but it is also true that these changes are slow and cadenced by contradictions with respect to cultural changes, which often are not even a sign.

To understand the current attitude towards our environment, to retrieve the fundamentals (the *Grundrisse* of Kant), and to look forward we should retrace what has happened over the last 50 years. Knowing well that the deep roots of this dramatic state lie in very distant times: the founding fathers of the economic paradigm that governs exchanges on the planet lived in times in which the finite size of the planet was not part of the actual culture, even when Thomas Robert Malthus (1766-34) was their contemporary (1723-90 Adam Smith, David Ricardo 1772-23, Karl Marx 1818-83).

The payment of the "environmental bill" is always deferred to future generations. Today the discount time is, perhaps, already expired.

Let us look, therefore, the rapid sequence of recent decades.

The 50s marked by anxiety to reconstruct the *boom*, the growth at all costs, no perception of the physical (or social) limits to growth, the last often confused with development.

In the 60s always set by the explosive growth of Western societies there is an early sign of significant concern: in 1968 with Aurelio Peccei and Alexander King, Elizabeth Mann Borgese founded the *Club of Rome*.

From 1970 to 1980 the Report *Limits to Growth* (published in 1972) becomes an important part of the environmental and avant-garde culture without any feedback on governmental and macroeconomic strategies. Unique drastic signal, not motivated by environmental considerations or sensitivity to “limits”, is the Kippur crisis of 1973. The *ecological sundays*: a stretch of nostalgia today.

From 1980 to 1990 a culture of *environmental avant-garde* grows: in Italy, and in Turin in particular, the first large scale solar building projects start. The hope that these projects become catalysts of a new design attitude was betrayed by a widespread economic paradigm: in fact, saving energy does not save money and is a sacrifice that cannot be applied to individuals. In 1987 Gro Harlem Brundtland defines, for the first time, the concept of sustainability: a definition that after 25 years would most likely need to upgrade on, but we can assume it as a general reference.

From 1990 to 2000 a new sensibility grows and consolidates. It is not *energy* the first depleting resource. The real limit is the space where energy is converted. The environmental conscious design, consistent energy technologies started achieving a profile of a trans-discipline.

From 2000 to 2010, a multidisciplinary approach to environmental design is a key responsibility among the “institutes of knowledge”. Eco-design is no longer a battle for the avant-garde, for explorers. It is a consolidated culture, but from the operational point of view, only randomly applied. Much of the undertaking is still missing.

SUSTAINABLE ARCHITECTURE IS THE FUTURE?

The cities are held on rhythms that last for generations, and architectures, that are part of the territory, remain for centuries.

A very long time with respect to the life of each of us: everyone lives in the city designed by others and helps to form a city where others will live.

It takes years to return the image to the cultures that have desired and designed the city.

Translated into numbers, the construction industry is responsible for 40% of the energy problems of the planet. The “permanence” of buildings is 10 to 30 times higher than that of transport: inescapable responsibility for the schools of Architecture.

When designing, one thinks too little that the building is a kind of living organism with changing needs: breathe, protect, communicate with its surroundings. One should also pay attention to the scale. Larger, more complex and expensive does not necessarily mean *better*. More often it is the opposite.

As a natural progression of “less is more” by Mies van der Rohe, of “less is a bore” by Robert Venturi, “small is beautiful” EF Schumacher, the definition: “less is beautiful” Alex Tombazis is one of the cleverest insights for sustainability. *Clever* not only because of the effectiveness in tools, energy, cost, and aesthetics, but also because there is an inner beauty to think and create in this way.

In 1992, in the occasion of a conference on bioclimatic building demonstration projects organized by the European Commission in Italy, an important Italian entrepreneur said: “We have learnt to speak a language that no one speaks”. It took twenty years, but today we can say that this language has become a comprehensive idiom. Sustainable construction has become a mature discipline, structured in universities, practiced in professional studios, promoted by international bodies.

Today, the level of attention to energy and its surroundings is widespread, from the local to the international level.

The emergency changed the picture, in the sense that the emergency has returned current.

Every city, every industry, every manufacturer wants to be *sustainable*, in some way, based on the assumption that:

- adopting one ‘green’ technology makes a building a *sustainable building*;
- ten of these buildings make a *sustainable neighbourhood*;
- three or four of these neighbourhoods pretend to shape the *sustainable city*.

However, this extensive sustainability is unconvincing. Hence the expression of Eduardo de Oliveira Fernandes: “how much grey is green”.

In urban projects it is necessary to work in a comprehensive way, connected among local players, creating shared visions and managing transformations. Technologies are only part of the picture; they do not constitute the whole framework.

In order to develop the concept of *comprehensive sustainability*, I need introducing the “ingredients of urban strategies”, that is derived from an

analysis of the successes and failures of urban pilot projects in the last decade in Europe.

Approaches to decision-making on an urban scale can be classified into four basic types:

- *Top-down approach* - Relating mainly to the activity of governments and/or institutions when introducing new regulations, as well as when reducing regulatory and procedural impediments;
- *Bottom-up approach* - Organising the needs of a community and preparing the policies which comply with these needs;
- *Demand-side approach* - Concerning the end-uses of citizens and their needs: mobility, housing, quality of life, economic opportunities, healthy environment, and so on;
- *Supply-side approach* - Referring to the capability of the market to organise the production of goods and technologies, which respond to consumers' need.

These four approaches create different urban policy consequences. One approach is neither better nor worse than the other, but all can be equally significant and effective when pursuing objectives of a better urban quality. In practice, the urban policies are not exclusively stimulated by "top down" or "bottom up", or only "supply-side" or "demand-side". Usually policies are a combination of the four approaches and can be placed in a Cartesian diagram, which refers to the supply ↔ demand on the X axis and the top-down ↔ bottom-up on the Y axis (see figure). This conceptual framework gives the innovative organisation of the project.

Urban strategies become a combination of policies wherein each of the quadrants identified by the diagram translates into a particular type of approach:

- *Top-down - Demand side*

This is the city planning in the interests of the general public - the domain of *Government*. The policy needs to be governed from the top and is primarily devoted to the demand. The European cities movement towards the Covenant of Mayors, aiming at satisfying 20% of the European energy demand by renewable sources by 2020, is developing several Action Plans on an urban scale and government policies of supply and demand. These can be seen as expressions of *government* actions.

- Bottom-up – Demand side

This red area is considered the domain of *Involvement*, where citizens and users get involved and participate in decision-making processes. The policy of Involvement and Partnership move from bottom and belong to the demand side. These policies at the urban level can be found in many European Urban Pilot Projects. It's a not exclusively technical approach to sustainability: process and methods are put at the centre.

- Bottom up – Supply side

This green area is the domain of *Development*, which supplies integrated responses and methodologies to urban problems with the involvement of professionals.

It represents the Good Practices, promoted from the bottom by technical experts, professionals who, in fact, constitute a supply of expertise. Renewable energy, eco-building, neighbourhoods with high environmental quality are among the topics with the largest budgets at the European level.

- Top down – Supply side

This yellow area is the domain of *Investment* in production and urban marketing. This involves the supply of technical solutions and industrial products to the sustainable city. It works from the top due to the need to plan investments well ahead. It is evident nowadays the acceleration in the market for green technologies and renewable energy.

UTOPIA OR NEW DESIGN COMMITMENT?

These are guidelines for a general understanding of the concept of sustainability and its evolution after the famous definition of Mrs. Gro Harlem Brundtland (Our Common Future, 1987).

What are the consequences, implications and responsibilities of the project and in particular the urban and architectural design? And what are the responsibilities and commitments of those who teach “architectural design”?

Who teaches architecture affects the future and is a long-term future. The buildings and the changes in the territory generally last many decades and sometimes centuries: this is the enormous responsibility of the Institutes of Knowledge.

Professional operators who will rule the trends in the years 2020-2030 are now our students, or will be our students in the next ten years.

The barriers that have always been in our schools and academies dividing the architectural design and the industrial construction processes have to be torn down. The continuum of knowledge is the real way to make a new design commitment. It does not matter to keep disciplines and fields separate: they will be overcome and overwhelmed in time.

What really matters is that the user of these disciplines, the designer, knows how to move through their territories free from foreclosure.

There are two problems to be addressed:

- The training of professionals
- The training of clients.

The competent professionals without cultured clients are useless unemployed. Without competent clients, capable professionals are dangerous, because they end up unable to take advantage of good professionals.

The two problems arise in an economic antagonist framework: save "environment" does not save "money" of private investors, but it saves a lot of money to the community and is crucial to the quality of life and the physical and social condition in the medium-long term.

We must be able to shape a culture of values for which the protection of the environment becomes a "beautiful thing to do" and worthy of financial sacrifice.

Question: will we make it? Surely we will, but the problem is "how": blade runner city or the heavenly vision of the New Urbanism?

Many countries will not make it. Better to ask which countries will: difficult to answer without falling into catastrophic cliché, or bland optimism. One thing is almost certain: it is more likely that make it who thought it before. Perhaps we are already late, but worth a try, and there are no alternatives.

If we read the data of the recent evolution of the planet scenarios of great interest are shaped. If we try to represent the world in recent decades appear with clarity the great mobility of the variables and the evolution of the conditions of life, in every place on earth and with impressive speed.

Change is rapid and the waves of change, one after the other, faster and faster. We need to identify the wave on which we should direct, and follow

it, accepting the risk of skating from one wave to another before finding the right one. It's about designing another planet in this planet today, with these technologies or technologies that are not very different. To design another planet it takes another culture. Not so much a different technique or technology. Perhaps this is the most arduous problem. Buckminster Fuller spoke of "spaceship earth": a wonderful metaphor.

Our predecessors have often had exceptional visions, amazing concepts if observed after 200 years. Just think of the urban design of Turin, a city that was ahead of its time.

With the Renaissance we have acquired the "scientific method" and this with the idea that science and technology could dominate nature.

The concept has matured in four hundred years and somehow paradoxically surpassed itself, and today we begin to understand that it is with the nature that we have to master the technology. A concept that could be dangerous to express in the heart of the scientific and technical culture, but I'm pretty sure of the understanding of Galileo.

— ROBERTO PAGANI **

* Translated and adapted from: "Inauguration of the Academic Year 2007/2008 of Politecnico di Torino. Keynote Address by Prof. Roberto Pagani"

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